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MODULAR ASSEMBLY OF ANTIBODY GENES, ANTIBODIES PREPARED THEREBY AND USE

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(56) Prior Art Documents
      EP 173494
      WO 86/01533
      EP 125023

(57) Chimeric cDNA that codes for (1) human constant regions of
      Antibody and (2) non-human variable regions. The AB and
      methods for preparing same are also claimed.

CLAIM

1.   A module vector comprising a cDNA sequence coding for
the substantially complete variable region of an immunoglobulin
chain, said chain including at least a substantially complete V-J
junction, in the case of a light chain, or a substantially
complete V-D-J junction, in the case of a heavy chain; and said
vector lacking any constant region sequences or any intron
sequences.

12.   A method of directly preparing a genetic sequence coding
for a chimeric immunoglobulin chain having a constant human region
and a variable non-human region of any desired specificity, which
comprises:

a)   providing a cDNA genetic sequence coding for a substantially complete variable region including a V region in operable linkage with a J region;

b)   providing a module vector containing a genetic sequence module coding for said constant region;

c)   operably linking said sequence (a) to said module vector (b).

17.   The method of claim 12 wherein said step (a) comprises:

(a') providing mRNA coding for said variable region from a cell secreting monoclonal antibodies of said desired specificity; and

(b") priming the formation, by reverse transcription using said mRNA as a template, of cDNA derived therefrom, with a polynucleotide molecule comprising a consensus genetic sequence for the J region of said immunoglobulin chain.

18.   The method of claim 17 wherein said consensus genetic sequence is selected from:

(a)   human heavy chain J region;

(b)   mouse heavy chain J region;

(c)   human Kappa J region;

(d)   mouse Kappa J region; or

(e)   mouse Lambda J region.

19.   The method of claim 17 wherein said consensus genetic sequence is selected from:

GCCAGTGGCAGAGGAGTCGGT (MJH1);

GAGAGTGTCAGACGAGTCGGT (MJH2);

ACCAGTGACAGAGACGTCGGT (MJH3);

TCCCTGAGACCAGTGGCAGAG (MJH3-BSTEII);

ACCAGTGGCAGAG (MJH-BSTEII(13));

GTCAGTGGCAGAGGAGTCGGT (MJH4);

GCAAGCCACCTCCGTGG (5JK1);

CCCTGGTTCGACCTCTAGATT (JK2BGLII);

GTGCAAGCCTCCCCCCTGG (5JK2);

GCAAGCCGAGCCCCTGT (5JK4);

GCCCCTGTTTCAACCTCTAGATT (JK4BGLII);

GCAAGCCACGACCCTGG (5JK5); or

TGGTTCGACCTTTATTTTG (MJK).